WHAT IS CLAIMED IS:

1. A hybridization assay comprising the steps of:

(a) generating a population of tagged target nucleic acids from an initial sample of nucleic acids with a collection of a representative number of tagged gene specific primers;

(b) contacting said population of tagged target nucleic acids with an array of tag complements immobilized on a solid support; and

(c) detecting any resultant hybridization complexes on said array.

2. The hybridization assay according to Claim 1, wherein said tagged gene specific primers are not used in an amplification step.

3. The hybridization assay according to Claim 1, wherein the magnitude of any difference in hybridization efficiency between any two tag-tag complement pairs employed in said assay does not exceed about 10 fold.

4. The hybridization assay according to Claim 1, wherein any tag employed in said assay has a level of cross-hybridization that does not exceed about 10 %.

5. The hybridization assay according to Claim 1, wherein said tagged target nucleic acids are labeled.

6. The hybridization assay according to Claim 1, wherein said generating step (a) comprises enzymatically generating said population of labeled, tagged target nucleic by a protocol that includes a non-amplification primer extension step in which said collection of a representative number of tagged gene specific primers is employed.

7. The hybridization assay according to Claim 6, wherein the magnitude of any difference in hybridization efficiency between any two tag-tag complement pairs employed in said assay does not exceed about 5 fold.

8. The hybridization assay according to Claim 7, wherein the magnitude of any difference in hybridization efficiency between any two tag-tag complement pairs employed in said assay does not exceed about 3 fold.

9. The hybridization assay according to Claim 8, wherein any tag employed in said assay has a level of cross-hybridization that does not exceed about 2 %.

10. The hybridization assay according to Claim 9, wherein any tag employed in said assay has a level of cross-hybridization that does not exceed about 1 %.

11. The hybridization assay according to Claim 6, wherein said initial nucleic acid sample is a ribonucleic acid sample.

12. The hybridization assay according to Claim 6, wherein said assay comprises generating labeled, tagged target nucleic acids from at least two distinct initial nucleic acid samples.

13. A kit for use in a hybridization assay, said kit comprising:

(a) at least one of:

(i) an array of distinct tag complements immobilized on the surface of a solid support; and

(ii) a set of a representative number of distinct tagged gene specific primers; and

(b) means for identifying the physical location on said array to which each distinct tagged gene specific primer hybridizes.

14. The kit according to Claim 13, wherein said kit comprises both said array and said set of tagged gene specific primers.

15. The kit according to Claim 13, wherein the magnitude of any difference in hybridization efficiency between any two tag-tag complement pairs taken from said array and set of tagged gene specific primers does not exceed about 10 fold.

16. The kit according to Claim 13, wherein any tag found in said set of tagged gene specific primers has a level of cross-hybridization with respect to said array that does not exceed about 10 %.

17. The kit according to Claim 13, wherein said means comprises a medium that includes: (a) identifying information about the physical location on said array to which each distinct tagged gene specific primer hybridizes; or (b) a means for remotely accessing said information.

18. The kit according to Claim 17, wherein said means for remotely accessing said information is a website address.

19. An array of distinct tag complements immobilized on a solid support, wherein said tag complements are members of a collection of tag-tag complement pairs in which the magnitude of any difference in hybridization efficiency between any two tag-tag complement pairs in said collection does not exceed about 10 fold.

20. The array according to Claim 19, wherein said tag complements are nucleic acids.

21. The array according to Claim 19, wherein said array has a density that does not exceed about 400 spots/$cm^2$.

22. A set of a representative number of distinct tagged gene specific primers comprising a tag domain and a primer domain, wherein said tag domains are members of a collection of tag-tag complement pairs in which the magnitude of any difference in hybridization efficiency between any two tag-tag complement pairs in said collection

does not exceed about 10 fold.

23. The set according to Claim 22, wherein each gene specific primer is a deoxyribonucleic acid.

24. The set according to Claim 22, wherein any tag domain has a level of cross-hybridization with respect to said tag complements of said collection that does not exceed about 10 %.

25. The set according to Claim 22, wherein said set comprises at least 20 distinct tagged gene specific primers.